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OHIO CULTIVATOR.

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EDITOR AND PROPRIETOR.

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Publisher's Notice

Premiums! Premiums!! In addition to the volumes before offered, we are now prepared to send vol. 3 of this paper as a premium, also the current volume if desired, for 8 subscribers with $6.) Those flower seeds are also ready—6 papers for four subscribers, and 12 papers for eight.

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We have concluded to allow larger commission than heretofore to traveling agents; also to officers of Agricultural Societies. Will they not make an effort to increase the number of our subscribers in their respective counties. It will be found the surest method of increasing the interest and usefulness of their societies.

Improved Plows--Deep Plowing.

Mr. Editor:—Since *book farming and deep plowing* is becoming the hobby of agriculturists, it is quite necessary that we have the book and the plow that will suit the purpose. The *book* we have in the Cultivator—but the plow we have not all got; hence we see farmers frequently endeavoring to plow deep, some with two, some three, and some even *four* horses. The difficulties attending plowing with more than two horses is self-evident to every farmer; besides, many of us who can afford to keep two horses cannot keep a larger number. The common fault of our plows is, they cut too wide for the depth; hence, when we wish to plow deep, we must take a very wide furrow, and so much more soil to be displaced requires so much more power; and the furrow cannot easily be taken deep enough with two horses without taking it so narrow as not to turn properly.

Your intelligent and practical correspondent, Mr. Thomas Noble, of Stark county, aware of this difficulty in the plows of this country, sent to England for one as a model; and after some half a dozen alterations (to suit the soil and climate, I suppose,) he, in connection with Mr. Patridge, of Massillon, and some other intelligent farmers of the vicinity, have produced a plow that will take a furrow something near two inches narrower and deeper than our common plows, and turn it uniformly. Its draught has never been accurately tested, to my knowledge, but from the appearance of the horses, I think it runs much lighter than those commonly in use. I think it a decided improvement on the two horse plow for those who wish to plow deep. I would add that this communication is written for the benefit of farmers, and without the consent or knowledge of Mr. Patridge, the manufacturer, at Massilon, where a few of the plows may be had, fully ironed and finished in a workmanlike manner. Plow Boy.

Dalton, Wayne county, O., 1848.

The Osage Orange.

Its Appearance—How to Sow the Seed and form a Hedge—A Protection to Orchards and Fruit Gardens—Protection of Sheep from Dogs—Will it endure the Winter, &c.

We have received of late a large number of letters asking for further information in reference to the Osage Orange as a hedge plant; and the demand that exists for the seed shows conclusively that many persons are beginning to appreciate its value for this purpose.

The appearance of the plant or tree, as has been before stated, is not unlike the true Orange. The above engraving (from the Horticulturist,) is a correct representation of a small branch; though in rich soil and when young, the leaves are considerably larger. It is not an evergreen, but during the whole summer, and until late in autumn, the leaves are of a brilliant and shining green, which makes the hedge (or tree) an object of much beauty. The wood is very hard and strong, and the thorns so sharp and numerous that no animals will attempt to get through a properly formed hedge.

Preparing and Sowing the Seed.—From all that we can learn by the numerous experiments of last year, we believe that no difficulty need be experienced in causing the seeds to vegetate—but they should be mixed with wet sand and allowed to *freeze* repeatedly; or, if procured too late for freezing, be soaked in water four or five days (in a kitchen or other warm room,) before sowing. By both of these methods complete success has been secured.

The time for sowing is not very material—we should prefer the time of corn-planting, or when vegetation is brisk in the spring. Sow the seeds in rows, two or three feet apart, and two or three inches apart in the rows, on any good mellow soil, and keep clean of weeds during summer. The plants will be from one to two feet high at the end of the season, and should be planted in the hedge row when one year old.

Planting.—The ground where the hedge is to be planted, should be plowed in the fall (if hard or in grass,) so as to be mellowed by the frosts of winter. Plow again as deep as possible in spring, and make the surface a little rounding, so as to avoid standing water after setling.—Then make the surface smooth, and set the plants in a single straight line, eight or nine inches apart; or if a very close hedge is desired, set them in a double line, one foot apart in each—six inches between the two rows, and the plants in one row to stand opposite the vacant space in the other, thus:

. . . . . .

. . . . . .

When set, cut off all the tops within about two inches of the ground. This will cause two or more shoots to spring up. The next year, these are to be cut off within about six inches of the ground—which will cause many lateral shoots to form, and thus make the hedge thick and close at the bottom. Or, if the plants are set in a single line, the following plan may be adopted—we saw this practiced by Mr. Jackson, near Cincinnati, and think very highly of it:

[*Plan of Training a Hedge one year after planting.*]

Suppose the plants standing eight or nine inches apart, with two or three stems to each plant—cut off all within six inches of the ground, save one to each plant, and cut these to about eighteen inches in length; then begin at one end and bend down the top of the first plant to a curve that shall not exceed eight inches in height—fasten it with a hooked peg, as represented at the left end of the above cut, and then bend the next plant twisting the top under the curve of the first, then the third the same way under the second, (as represented above,) and so on until the whole line is completed. The plants will then grow firmly interlocked with each other, and make a hedge sufficiently close to exclude all kinds of small animals, as dogs, cats, poultry, &c.

Protection to Orchards, &c.—Nothing can afford more appropriate and complete protection to fruit yards, against depredations from boys, than a hedge of this kind. For when of good size, say eight to 12 years old, the hedge will be so strong and so armed with sharp thorns, that no one will venture to attempt getting through or over it. This fact has been fully tested by fruit growers near Cincinnati, and these hedges are now being very extensively planted there for this purpose.

To protect sheep from dogs, is another very important use to which these hedges should be applied; and we have no doubt they will be extensively used for this purpose as soon as sheep farmers come to learn their utility. A hedge planted as we have directed above, and properly trimmed for a few years, will form a perfect barrier to dogs. They will not be able to go through it nor jump over it. Then, too, a fence of this kind forms a much better shelter from *cold winds* than an ordinary rail fence, also a grateful shade from the hot sun.

Will it endure the Winter?—This question can be answered unhesitatingly in the affirmative, as far as regards the greater part of Ohio, and other States no farther north. Downing says, (see our last paper,) that it may be expected to stand well in all states south of New York. A writer in the Albany Cultivator, (see our last year's vol., p. 180,) says it endures perfectly at Beaver, Pa., and he considers it as hardy as an apple tree. In this city (Columbus,) we have very severe cold at times, from 10 to 15 deg. below zero, and sudden changes; and the trees have been grown here for the past ten years without any

injury—excepting to the tops of young plants, which does no harm.

The following letter just received from Dr. Kirtland, is of interest in this connection:

Letter from Dr. Kirtland--Osage Orange.

Cleveland, Feb. 20, 1848.

Mr. Bateham—*Dear Sir:*—Public attention seems to be attracted at this time to the subject of hedging

If my views are correct, experience has already decided that our scorching sun of summer, and the depredations of the boring Clytus, will render all species of thorn [*Crataegus*] foreign and indigenous, unavailing for hedges. The crab-apple is liable to the same objections.

What material can be furnished?

It is doubtful whether the Buck-thorn [*Rahmnus carthartieus*] will prove sufficiently robust [or thorny] to resist cattle; but it seems to be exempt from attacks of insects, and probably may answer the fullest expectations.

The Osage Orange is perhaps the most promising article—yet some trials with it have satisfied me that it will not answer in all locations and under all circumstances. During a series of years, that I attempted to cultivate it at Poland, Mahoning county, the growth of the preceding summer was invariably killed down to the ground during winter.* Subsequent experiments have decided that in the vicinity of lake Erie it stands the most severe weather that ever occurs. Whether in other points it will answer every expectation, remains to be tested by further experience; relying upon the evidence furnished by cultivators about Cincinnati, [and Philadelphia,] we are inclined to believe it will supply the *desideratum*.

Our fruit buds in this vicinity have thus far escaped destruction this season.

I am reduced very low with sickness, and am too feeble to write more. Very truly, yours,

J. P. Kirtland.

*Note.—As Poland is a short distance from Beaver, Pa., and the tree has been shown to endure the winter perfectly at the latter place, we think the experiment of Dr. K. must have been on soil that was too wet, or in some other respects unsuited for the purpose.—Ed.

The Hessian Fly--Its History and Transformations.

The immense losses sustained of late by the farmers of Ohio, must be sufficient apology for the space occupied in our columns by articles relating to the *Hessian Fly*. To our wheat farming readers we are quite sure no aplogy will be necessary, for there is scarcely any subject relating to agriculture which we can introduce at this time of more interest to them.

We have already given (in our volume of the past year,) a large number of practical suggestions in relation to the nature and habits of this insect, and the modes of preventing its ravages; and we had supposed that the researches of Dr. Fitch and others had left no room for dispute in regard to these matters—especially its transformations. But by a communication received a month or two since, and by a recent article in the *Germantown (Pa.) Telegraph*, we learn that there is still some difference of opinion on this subject; and either another species of Hessian fly has been discovered, or some writers have not observed matters correctly. The following is the communication referred to:

Coshocton O., Dec. 28, 1847.

Mr. Bateham:—A few days ago I transmitted to you a communication in answer to the interrogatories of the State Board, since which I have read with pleasure in your last Cultivator, the article on the Hessian Fly, (by Dr. Fitch.)

Having stated an opinion at variance from that advanced in the article, I proceed to offer a few reasons in favor of the theory that the egg is deposited on the *grain*, and against the theory that it is laid on the *leaf* of the wheat when it is first up.

In my opinion, there is but one brood in any year, the eggs for which may be hatched after the wheat is sowed, either in fall or in spring, and is sometimes in one and sometimes in the other, as circumstances may order.—Being thus first hatched, whether in the fall or spring, they remain in the pupa and transition state until about the time of the wheat coming in blossom, when they cut their way out of the straw and come out a fly. It is thus the straw is weakened and breaks. They then copulate, and the females are ready to deposite their eggs for another brood immediately after the grain is formed, and between that time and the time of cutting it—which they do on the outside of the grain or in it.

The grain being again sowed, is placed in the very circumstances most favorable for the hatching of the egg. This however does not always take place, but sometimes it perishes. Sometimes it is hatched and afterwards perishes.

In this way all the phenomena in regard to the insect are easily explained.

On the other theory it is necessary to suppose two broods in a year in order to account for all the phenomena. This, in my view, condemns it. I am not aware of a single fact which has been well authenticated, and which establishes two broods.

Coshocton.

Remarks.—The writer of the foregoing, we think cannot have read the entire essay of Dr. Fitch, or many other dissertations on this subject; or he would not be so sceptical in regard to there being two broods of the common kind of Hessian fly in a year. We think there have been facts and observations enough to settle this point beyond dispute. We have not room, and do not deem it necessary to quote the various authors in support of this point—the sum of them is given in that portion of Dr. Fitch's essay which we give in this number of our paper; and more briefly in articles published by us last year.

Our Coshocton friend has evidently read and adopted the theory of Miss Morris, of Pennsylvania, in regard to this insect, which was first published some ten years or more ago, and has recently been revived, with the announcement that to this lady belongs the honor of having discovered *a new species* of the Hessian fly—the habits and transformation of which correspond with her theory previously announced.

We append the substance of the recent article referred to. We have not elsewhere seen the opinion of Dr. Harris alluded to, and would thank the editor of the Telegraph to inform us where and when it was published, if at all:

From the Germantown Telegraph.

The Hessian Fly.—At a meeting of the Philadelphia Agricultural Society, held on the 5th of October, a verbal communication was made by a member, relative to a new species of Hessian fly, discovered by Miss Margaret Morris, of Germantown. This lady, having devoted herself with great zeal to the study of entomology, for several years past, has been investigating the natural history of the Hessian fly, with results which cannot fail to interest the general inquirer, and especially the farmer. It was commonly believed that the desposit of eggs was always made upon the leaves. Having, however, watched the progress of the insect from 1836, she was soon satisfied that she had frequently seen the larva within the seed. She had also detected it at various stages of its development progressing from the seed till it became situated between the body of the stalk and the sheath of the leaves. According to her observations, the larva recently hatched from the grain in the ground, penetrates to the centre of the straw, where it may be seen of a pale greenish white, semi-transparent appearance, in form somewhat resembling a silk worm. From one to six of these have been found at various heights from the seed to the third joint. Having reached the proper height, the maggot or larva cuts its way from within the hollow straw to the outside, where it takes on the pupa or flax seed from which it emerges in due season in the winged state resembling a small gnat. The fact so often observed that the Hessian fly lays its eggs upon the leaves of newly sown wheat, seemed to conflict materially with the discoveries of Miss Morris, whose statements consequently met with a great deal of opposition. Even professed naturalists openly questioned the correctness of her observations, or suspect that the insect she had observed was not a Hessian fly. This doubt and hesitation to admit of Miss Morris's discovery having lasted for several years, has just been terminated by the candid acknowledgement of the distinguished naturalist, Dr. Harris, of Cambridge, Massachusetts, that Miss Morris has been the first to discover and describe the habits of a *new species* of Hessian fly. To prevent the ravages of this fly, Miss Morris has recommended the procuring fresh seed from localities in which the fly has not made its appearance. In order to avoid the introduction of straggling insects of the kind from adjacent fields, she thinks it requisite that a whole neighborhood would persevere in this precaution for two or more years in succession. Since she has made these recommendations it has been ascertained that the seed wheat kept over one year will not be affected by the fly; as the eggs deposited in the grain either lose their vitality, or hatch out the first season and disappear.

We have thus become possessed of the important fact that in addition to the long known species of fly which lays its eggs on the wheat blades soon after sowing in the fall and spring, there still is another fly which deposits its eggs in the summer in the wheat during their soft or milky state. And for this discovery we, in common with so many others interested in agricultural affairs, are indebted to a lady residing within the limits of our society. Surely then we should be the first to acknowledge and sustain her claims to that distinguished merit which is the just reward of successful and useful research.

The Hessian Fly--(*Cecidomyia destructor.*)

From the Essay of Dr. Fitch.

Its Character, Transformations, and Habits.

As a general rule, the Hessian fly passes regularly through two generations annually. The first of these occupies the autumn, winter, and fore part of the spring, and is reared at the roots of the young grain, slightly below the surface of the ground. The second occupies the remainder of the spring and the summer, and is chiefly nurtured at the first and second joints of the straw. The time when its several transformations occur, is not perfectly uniform, being varied by the climate, the state of the weather, and perhaps other contingencies; and it is not improbable that individual specimens, placed in circumstances unfavorable to their development, have their growth retarded so much as to require even a whole year to complete their metamorphoses.

First Generation.—The Egg.—*When and where deposited.*—The eggs of the first generation are deposited chiefly in the fore part of September. Dr. Chapman says the deposit is made from the latter end of August till the 20th of September, and most other accounts coincide with this, though some extend the time into October.—On the 8th of October the fly was seen ovipositing in eastern Pennsylvania, in 1819, and it had wholly disappeared on the 11th. (*Amer. Farmer*, ii. 180.) The deposit is doubtless made later, at the south, than in this vicinity. Mr. Tighman's description of this process (*Cultivator*, viii. 82,) will convey so much more distinct a view to the general reader, than any other that has ever been published, that we here insert it. He says, "By the second week of October, the first sown wheat being well up, and having generally put forth its second and third blades, I resorted to my field to endeavor to satisfy myself by ocular demonstration, if I could do so, whether the fly did deposit the egg on the blades of the growing plant. Selecting what I deemed to be a favorable spot to make my observation, I placed myself in position by reclining in a furrow between two wheat lands. It was a fine, warm, calm afternoon; and I had been on the watch but a minute or two, before I discovered a number of small black flies, alighting and setting on the wheat plants around me; and so strong seemed to be their predilection for the wheat, that I did not observe a single fly to settle on any grass, or any thing within my view, but the wheat. I could distinctly see their bodies in motion when settled on the leaves or blades of the wheat, and presently one alighted and settled on the ridged surface of a blade completely within my reach and distinct observation. She immediately commenced disburthening her apparently well stored abdomen, by depositing her eggs in the longitudinal cavity between the little ridges of the blade. I could distinctly see the eggs ejected from a kind of tube or sting, or by the elongation of the body; the action of the insect in making the deposit, being similar to that of the wasp when stinging. After she had deposited, as I supposed, some eight or ten eggs, I easily caught her, upon the blade, between my finger and thumb..... After that, I continued my observations on the flies, caught several similarly occupied, and could see the eggs uniformly placed in the longitudinal cavities of the blades of the wheat; their appearance being that of minute reddish specks."

Its appearance and characters.—The account of the eggs, and also of the worms of the Hessian fly, as given by Mr. Herrick, is drawn up with such scrupulous care, and is so full and definite in every particular, that we are constrained to enhance the value of this essay by presenting it entire. He says: "The eggs are laid in the long creases or furrows of the upper surface of the leaves of the young wheat plant. While depositing her eggs, the insect stands with her head towards the point or extremity of the leaf, and at various distances between the point and where the leaf joins and surrounds the stalk. The number found on a single leaf, varies from a single egg up to thirty, or even more. The egg is about a fiftieth of an inch long, cylindrical, rounded at the ends, glossy and translucent, of a pale red color, becoming, in a few hours, irregularly spotted, with deeper red. Between its exclusion and its hatching, these red spots are continually changing in number, size, and position; and sometimes nearly all disappear. A little while before hatching, two latteral rows of opaque white spots, about ten in number, can be seen in each egg. In four days, more or less, according to the weather, the egg is hatched."

The Larva. *Growth of the worm, or active larva.*—Mr. Herrick's excellent description is continued as follows: "The little wrinkled maggot, or larva, creeps out of the delicate membranous egg skin, crawls down the leaf, enters the sheath, and proceeds along the stalk, usually as far as the next joint below," or, in other words, *to the base of the sheath*, which in the young autumnal wheat, is at the crown of the root. "Here it fastens, lengthwise, and head downwards, to the tender stalk, and lives upon the sap. It does not gnaw the stalk, nor does it enter the central cavity thereof; but, as the larva increases in size, it gradually becomes embedded in the substance of the stalk. After taking its station, the larva moves no more, gradually loses its reddish color, and wrinkled appearance, becomes plump and torpid, is at first semitranslucent, and then more and more clouded with internal white spots; and when near maturity, the middle of the

intestinal parts is of a greenish color. In five or six weeks (varying with the season,) the larva begins to turn brown, and soon becomes a bright chestnut color, bearing some resemblance to a flax-seed, &c."

When freshly taken from the root of the wheat, the mature worm measures about fifteen hundredths of an inch (0.15) in length, by about 0. 6 in breadth. It shows no signs of life when placed upon paper and turned over with a needle point. It is soft, glabrous, shining, white, oval and apparently composed of but nine segments, although twelve can often be distinctly perceived before its growth is completed.

Its mode of feeding.—We have hitherto sought in vain to ascertain, by ocular and microscopic examinations, how it is that the worm imbibes its nourishment from the stalk. To expose it to view, we are obliged to place it in circumstances so unnatural to it, that it apparently refrains from feeding. That it "gnaws" the stalk, as some writers in our agricultural papers, and some compilers of popular treatises inform their readers, is an error so gross as scarcely to deserve notice. Some have supposed that it absorbs its nourishment through the pores of its skin; but we incline to the blief that Dr. Lee's opinion is nearest the truth of any that has been hitherto advanced—that it takes in its nourishment by suction, in a manner more analagous to the leech than any other familiar object.

Its effects upon the crop.—The autumnal attack of the fly is in a double sense a *radical* one. Each particular shoot at whose root one or more of these larvæ nestles, is commonly destroyed by the time the worm has attained its growth. The presence of these worms is therefore readily detected by an examination of the young wheat in October or November. Individual shoots will be found here and there in the field, withered and changed to a light yellow color, strongly contrasting with the rich green of the vigorous uninjured plants. The frost or some other casualty may cause the ends of some of the other leaves to be of a pale yellow color, but here the whole plant is of that hue; and where a field is badly infested, this yellow "sickly" aspect is perceptible from a distance. On examining the withered plants, the worm, or flax seed if it has advanced to that stage, can be readily found. It is situated a short distance below the surface of the earth, at the crown of the root. One or two radical leaves start from this point, their bases forming a cylindrical sheath around the central or main shoot, which as yet is but in its infancy. It is within this sheath, at its base, that the worms repose, one, two, three, or more, and by imbibing the nutricious juices of the young shoot, cause it to wither and die. The mechanical pressure of the larvæ, so frequently spoken of as impeding the circulation of the fluids of the plant, and hereby causing it to perish, I think has had too much importance assigned to it, the young plants being so soft and pliant that they would readily accommodate themselves to this pressure, if they received no molestation beyond this.

Its change to a "flax seed" or dormant larva.—When the worm, or active larva, has fully completed its growth, a slight diminution in the dimensions of the inner soft parts of its body commences, in which the outer and harder skin does not participate, this latter retaining its original full size. The result of this contraction is, that the worm gradually cleaves from its outer skin. If examined with a microscope when this change has recently commenced, a slight translucent space is observable at the head end, and a larger and more obvious one at the pointed or tail end, plainly indicating that the enclosed worm does not entirely fill the outer skin. This contraction continues, until the worm becomes entirely separated from its outer skin, and lies within it like the finger within a glove. The outer skin at the same time changes in color. From its original whiteness and transparency, it gradually becomes opake, brown, and finally of a dark bay or chestnut color. Though *much less flat* than a flax seed, its resemblance in color, size, and form, to that familiar object, is so striking as at once to be remarked by every one.

The Pupa. *When formed.*—On the access of the first warm days of spring, as soon as the weather becomes sufficiently genial for some of our earliest plants to put forth their blossoms, the larva of the Hessian fly is rapidly stimulated to maturity. The present year, so early as the 21st of April, most of the insects were found to have taken on their pupa form. As this season was more forward than usual, this may prove to be an earlier date than is common for this occurrence; a more accurate criterion by which to indicate it definitely, is no doubt by a reference to the progress which vegetation has made at this time. We may therefore state, that in all parts of our country, the Hessian fly will probably be found in its fully formed pupa state, about a week after the liverwort, (*Hepatica triloba,*) the trailing arbutus (*Epigæa repens,*) and the red or swamp maple (*Acer rubrum,*) first appear in bloom, and simultaneously with the flowering of the dry strawberry (*Comaropsis fragarioides,*) the common five-finger (*Potentilla canadensis,*) the hill-side violet (*Viola ovata,*) &c. It continues in this state about ten or twelve days, and then sends out the winged fly.

The flax seed shell has now become quite brittle, breaking assunder transversely if rudely handled, and one of its ends slipping off from the inclosed pupa like a thimble from the end of the finger. On removing the pupa from its case, it is found to be 0.13 long by 0.05 broad, of an oval form, with rounded ends, and having its limbs and body enveloped in separate membranes.

Its change into a fly.—The time for its final transformation having arrived, the pupa breaks open and crawls from its puparium or flax seed case, and works its way upwards within the sheath of the leaf, until it arrives at some cleft in the now dead, brittle and elastic straw; through this cleft it gradually, by bending from side to side, crowds its body until all except the tip of the abdomen is protruded into the air, the elasticity of the straw causing it to close together upon the tip of the abdomen, so much as to hold the pupa in this situation secure from falling to the ground; and as if to preserve the body in a horizontal position, the feet are slightly separated from the abdomen, and directed obliquely downwards, with their tips pressed against the side of the straw, thus curiously serving, like the brace to the arms of a sign post, to support the body from inclining downwards. Thus securely fixed, and now freely exposed to the drying influence of the atmosphere, the outer membrane of the pupa speedily exhale its moisture, and as it becomes dried, cracks apart upon the back part of the thorax; out of this cleft the inclosed fly protrudes its head and thorax more and more, as it gradually withdraws its several members, the antennæ, wings and legs, from the cases in which they are respectively enveloped—a process analagous to that of withdrawing the hand and its several fingers from a tight glove; until at length entirely freed, the now full-fledged and perfectly formed fly leaves its pupa skin and mounts into the air.

The Fly. *Its duration.*—That the fly which comes out in the spring continues but a very short time, I infer from the following data. A number of wheat plants, containing pupæ, were transplanted into a box of earth, April 21st, and inspected daily. On the morning of May 1st, about half of them were found to have sent out the perfect fly within the preceding twenty-four hours. On repairing to the field whence these plants were taken, the fly was found to be out in large numbers. At every step, a dozen or more would arise from their coverts, sluggishly fly a few feet, and alight again. In other fields, where none of the flax seeds could previously be found, an occasional fly was met with, on the same day. A week after this, on a thorough examination, no flies could be found, nor were but two specimens afterwards met with, until the coming out of the summer brood.

Second Generation.—After the full details that have already been given, but a few words will be required under this head. About the first of May the fly appears, and deposits its eggs upon the same crop of grain that has already reared one brood, and also upon any spring wheat that is sufficiently forward for its purposes. The radical leaves of the winter wheat are now more or less withered, and the fly therefore selects the more luxuriant leaves that have put forth above these. The worm hatches, and again makes its short journey to its future home, at the base of the sheath; it consequently now nestles at the first and second joints of the young stalk, and is sometimes, though rarely, as high as the third joint. Even before the worm reaches the base of the sheath, it has frequently grown nearly to its full size, (as shown, fig. *m.*) The stalk has now attained such vigor and hardiness that it is seldom destroyed by this spring attack. A slight swelling, immediately above the joint, (fig. B. §§,) commonly indicates the presence of the larva beneath. This is a fact which has been overlooked, or at least not distinctly stated by writers hitherto. We only find it noticed by Mr. Bergen, (*Cultivator*, viii., 133,) who informs us that in a crop of barley which was destroyed by the Hessian fly, many of the stalks were "at the joints as thick as a man's finger." The insect therefore is a true *gall*-fly, although when but one larva succeeds in reaching the joint, the swelling caused by it is but little if at all apparent. More commonly however, the straw becomes so weakened, that it is unable to sustain the weight of the wheat head, and it accordingly bends down (as represented, fig. B††,) with the force of the wind and the rains.—The appearance of a badly infested field, as harvest time approaches, cannot better be described than in the words of M. Kollar. The grain looks as though a herd of cattle had passed through it, so broken and tangled together is the straw. The worm attains its growth and enters its flax seed state about the first of June, and the flies of this second generation commonly come forth about the last of July and in August.

Miss Morris's theory.—We do not deem it necessary to go into a detailed examination of the theory revived by Miss Morris in 1840, that the eggs of the Hessian fly are deposited in the grain, and that the larva lies in the centre of the culm. We suppose this theory to be abandoned by its late advocates, from the fact that for four years past, we have met with no farther attempts to sustain it. To us it appears manifest that the lady was widely misled at the very outset of her observations by an error in Mr. Say's account, to-wit, that "the perfect fly appears early in June." Were this the case, she might well enquire, "Where are the eggs placed? Surely not in the old and dying stalk .... and there is no young wheat growing from June until September." The flies which Miss M. saw in June, 1836, "in countless numbers, hovering over and settling on the ears of wheat," we cannot but suspect were the same species which in this section of country appears in such swarms upon the heads of wheat about the middle of June, that it has been for years mistaken hereabouts for the wheat-fly or midge, (vide *Transactions N. Y. State Ag. Soc.*, vol. v., p. 260 and 267.) In size and color it does closely resemble the Hessian fly, and might readily mislead any one just commencing their observations. That occasional specimens of the Hessian fly may be taken in June we do not doubt; but that the main brood comes out, deposits its eggs, and disappears, a month earlier than this, we are quite confident, from our own observations as already related, as well as from the testimony of almost every writer who speaks definitely upon this point. Those few larvæ which have been found in the centre of the wheat culm, were not unlikely of some other species, since in this particular its habits correspond with those of the *Cephus pygmæus*, the *Chlorops pumilionis*, &c. That the Hessian fly larva resides in the sheath of the culm, and not in its centre, we feel confident Miss M. has herself become convinced ere this day:—so earnest and candid an enquirer after truth, and one so capable of giving to every fact its due weight, cannot long remain in error, upon a point so susceptible of demonstration as this.

Its Parasites.—It is well known that one of the most effectual means for keeping the Hessian fly in check and preventing it from literally *swarming* all over our land, has been provided by nature herself. Other insects have been created, apparently for the very purpose of preying upon this, and thus preventing it from becoming inordinately multiplied. The world is indebted to Mr. Herrick for much interesting information respecting these insects, the result of his own accurate and patient investigations. As we suppose, should we succeed in more fully tracing out the history of these and other Cecidomyian parasites, making them a subject of a separate memoir at some future day, we refrain from devoting to them any considerable space in the present paper. The general reader, however, will scarcely pardon us, if we omit all allusion to them. We therefore subjoin a brief sketch of the contents of this part of Mr. Herrick's article.

The Hessian fly is preyed upon and devoured by at least four other insects. When its eggs are layed upon the wheat leaves, they are visited by an exceedingly minute four winged fly, (a species of *Platygaster,*) which punctures the egg and deposites in it four or six eggs of its own; the Hessian fly worm hatches, grows, and passes into its flax seed state with these internal foes feeding upon it; it now dies, and its destroyers in due time escape from the flax seed shell. Three other minute four winged flies, or bees as they would be called in common language, destroy the fly when in its flax seed state. The most common of these, by far, is Say's *Ceraphron destructor.* Alighting upon the wheat stalks, instinct informs them precisely where one of these flax seeds lies concealed. They thereupon "sting" through the sheath of the stalk, and into the body of the worm, placing an egg therein, which hatches to a maggot, lives upon and devours the worm. Such are the means which nature has provided for preventing this pest from becoming unduly multiplied. And so efficient and inveterate are these foes, that more than nine-tenths of all the Hessian fly larvæ that have come into existence, are probably destroyed by them, Mr. Herrick thinks, and we have strong reasons for believing that his estimate is within the truth.

From the date given by Mr. Herrick of his first discovery of the egg parasite, we know that the first or autumnal generation is attacked by it. Whether it preys upon the second or spring generation also, does not so clearly appear. From our own observations, and the well known habits of the other parasites, it would seem to be principally upon the second or spring generation which they prey. Indeed we can scarcely conceive it possible for them with their short ovipositors to reach the flax seeds of the first generation, buried as these are beneath the surface of the earth and reposing at the roots of the young wheat. That these parasites are surprisingly abundant, and destroy immense numbers of the spring generation, any one can easily ascertain by collecting the infested straw at harvest time, and securely enclosing it, to preserve all the insects which hatch from it. He will thus obtain parasites in abundance, and only occasionally a Hessian fly. On the other hand, numbers of the young plants taken up by us in April, evolved nothing but Hessian flies. The observations of a single season, we are aware, cannot be relied upon for establishing a point like this. But they force upon us the suspicion that it is chiefly the second generation that is infested by parasites, and that the first is comparatively free from them.

The Water Ram--Its Cost, &c.

Mr. Bateham:—Having seen several notices of the Water Ram in your Cultivator of late, and as you have been asked to give further information concerning it, perhaps it will not be amiss for me to say to you that I am well acquainted with the construction of the water ram and the principles on which it operates. I believe I brought the first one here that ever came to this State. It was in July 1846—and have since put many of them in operation in this part of the State. They work to admiration, being very durable and effective, and not liable to get out of order. I put one in operation the other day for Mr. John Henneman, on the national road near Mor-

ristown; in this county; it raises the water 90 feet above the fountain, through a ½-inch tube, and discharges 25 barrels per day. The driving pipe is only one inch in calibre.

I have seen many of them at work in the East—near Philadelphia, which is my native place. Some persons who have attempted to put them in operation have failed to make them work, owing to want of skill in the business. As the operation of the machine is a wonderful result of nature and art combined, it is a nice matter to fit them up so as to have them work well without stopping. I buy the castings and put the rams in running order myself, and warrant them to work well; or I will sell them to any persons at $15 each, and give them all the necessary instructions how to set them in operation. We have a great many to put in this spring.

By the use of the water ram farmers and others can build their houses on the most desirable spot on their premises, and if they have a good spring where a small descent can be obtained, they can run the water to the dwelling, and also have it run into the milk house and cattle yard, &c. If the pipe is sunk 2½ feet under ground, the water will always run sweet and cool.

Lead pipe can be bought in St. Louis for 5 cts per lb., and in Cincinnati for 6 cts. By this machine we can force water from a brook or river sufficient to supply a whole village or town. It will elevate water over 200 feet. In the East they supply railroad stations with plenty of water by this means.

Persons wishing to purchase my rams can be supplied on giving me two weeks notice.

If the farmers in any neighborhood will furnish me five or six jobs, I will attend to them in the month of April or May next. I wish it to be understood that the springs must afford water enough to fill a one inch or ¾ tube, which is the smallest size driving pipe that we can use to advantage. Then we can raise water enough for house use and other purposes.

The whole of the fixtures are placed under ground and the coldest weather will not freeze them. It is believed the machines will run 200 years and not get out of order. The pipe will last for ages. One or two dollars for repairs will keep them in order for 300 or 400 years.

ELISHA BROWN.

Belmont, Ohio, Feb. 17, 1848.

N. B. All letters addressed to me at Belmont post office, O., postpaid, will be strictly attended to. E. B.

Food of Sheep--Comparative Value of Oats and Hay.

FRIEND BATEHAM:—The question which apeared in the Cultivator of the 15th of last month (Jan.,) in regard to the relative value of sheaf oats and hay, as food for sheep, is certainly one in the solution of which all those engaged in sheep husbandry, are deeply interested. I hoped to see in the last No. a satisfactory answer, but as none appeared, I give below the result of a calculation made from data, deduced from analysis by some of the best agricultural chemists. My estimate is based upon the supposition that one dozen sheafs weigh 109½ lbs., and yield one bushel of grain, weighing 42 lbs., and 67½ pounds of straw, which is given by agricultural authors as the average weight and yield:

	Water.	Husk, or Woody Fibre.	Starch, Gum and Sugar.	Gluten, Albumen, Legumen, &c.	Fatty matter.	Saline matter.
Meadow hay 100 lbs.,	14,1	30,0	40,0	7,1	2 to 5	5 to 10
Clover hay 100 lbs.,	14,0	25,0	40,0	9,3	3,0	9,0
The two added,	14,8	38,7	44,5	6,8	2,8	5,4
Oat straw 67½ lbs. do	8,1	30,3	23,5	,8	,5	4,0
Oats 47 lbs., contains	6,7	8,4	21,0	6,0	2,3	1,4

From this calculation it appears—First: That hay is preferable. Second: That clover hay (ceteris paribus) is better than meadow hay, should the sheep consume every ounce of each and eliminate and adapt *all* of the nutritive matter. Add to this, that in the usual way of feeding, there is a much greater proportion of the oats wasted than of the hay, and it would seem the hay is decidedly the more economical food. I may say, too, the showing of science in this matter is corroborated by experience, as I have asked a number of practical shepherds and have in all cases received a response favoring hay.

Thine, &c., WM. H. LADD.

Richmond, O., 2d mo. 8th, 1848.

BURRALL'S CORN SHELLER—P. S.—I think there was an inquiry in a recent number of thy paper respecting Burral's corn sheller. They can be had in Pittsburgh, price $12. My father and self are both using them, obtained through our friends J. Jordan & Son, commission merchants of that place. W. H. L.

OHIO CULTIVATOR.

COLUMBUS, OHIO, MARCH 1, 1848.

To Readers and Correspondents.

A number of communications are on hand for next number—some of them need more revising than we have found time to bestow, but they will have attention after a while.

A review of the Report of Ohio State Board of Agriculture is omitted for want of room. It will appear in our next.

MEETING OF WOOL GROWERS.—We have another letter from a wool grower in favor of a meeting. We have not heard from any member of the Steubenville convention on the subject referred to in our last.

PROTECTION OF SHEEP.—As it seems almost in vain to expect any sort of legislative protection for sheep against the ravages of dogs, we advise farmers to surround their fields with close hedges of the *Osage Orange*, as directed on the first page of this paper. We have full confidence that it would afford complete protection, besides making a most durable, cheap and effective fence. A quart of seed, costing only $2, is sufficient for planting 40 to 50 rods of fence; and the whole expense of cultivating 4 or 5 years, by which time it will be effective, need not exceed 25 cents per rod—then a mere trifle each year for trimming will keep it in order for a lifetime, or longer.

PLOWS FOR BOTTOM LANDS.—We advise all who cultivate rich bottom lands, to read the advertisement of T. Wilmington & Co., on our last page. We have seen the plows extensively used on lands near this city where no others would keep clean, and they answer the purpose admirably. Large numbers will be purchased in this vicinity this spring.

PRICE OF SUBSOIL PLOWS.—The price of the large size subsoil plows, manufactured by Messrs. J. Ridgeway & Co., of this city, is only $8,50—not $10, as we before stated.

AGRICULTURAL STORE IN COLUMBUS.—We take pleasure in announcing that Mr. JOHN BURR, of this city, has taken the new store in the Post Office building, with the intention of dealing in all kinds of agricultural implements, seeds, &c., in connection with an auction and commission business. Patentees and makers of implements, &c., will find this a suitable establishment for the sale of their articles.

PLANTING FRUIT TREES.—Spring has come again—and we invite the attention of our readers to the excellent and timely remarks of Mr. Elliott, in this paper, on selecting and planting fruit trees.

DROWNING THE PEACH GRUB.—Mr. J. Proctor, of Lawrence county, writes us that he has planted about 100 young peach trees this winter from a nursery where it was overflowed so that the roots were under water for several days during the flood in December, and he only found one grub worm in the whole lot. He thinks the water destroyed the worms; as he found one or more worms in a majority of trees planted from the same ground last year. Can any one give further information on this point?

POTATOE DISEASE.—A subscriber inquires whether in our opinion it will be safe or advisable to plant potatoes this spring grown in a field where some were found diseased last year.

We should *prefer* seed potatoes from a field where no disease existed, if such could readily be had; but if the potatoes appear sound at planting time, we should not hesitate to plant them rather than be at much extra trouble or expense in procuring others. We think if the roots are at all affected, the disease will show itself before planting time; and believing the cause of the malady to be in the atmosphere or the weather, we don't think it is communicated by the roots. We advise farmers to plant potatoes earlier than usual this year, and on none but dry land.

Notices of Pulications.

THE ARCHITECT—a series of Original Designs for Domestic and Ornamental Cottages, connected with Landscape Gardening, adapted to the United States—Illustrated by Drawings of Ground Plats, plans, perspective views, elevations, sections and details—By WILLIAM H. RANLETT, Architect, New York.

We have received the first number of the second volume of this very beautiful work, and we take great pleasure in commending it to the attention of our rearders—especially to those who may contemplate building a dwelling house, as a work which will be of immense service to them in the way of imparting correct principles of taste, and giving illustrations of the different styles of cottage and villa architecture, and of modern landscape gardening. The work is got up in the very best style; printed on the finest paper in large quarto form; and each number contains two or mor more finely ongraved designs, with working plans, ground plots, &c.—and specifications for making contracts with the builder, quantity and cost of materials, &c. In short, it is just such a work as every person wants when he begins to think of building a house, whether he desires to build on a large or small scale.

The great fault with former works on these subjects has been the *costly style* of the dwellings the have recommended. But this objection does not lie against the work of Mr. Ranlett. In speaking on this point he remarks, that "it is a chief aim of the work to show that beauty and convenience in a dwelling house are not only entirely compatible with strict economy, but they are in reality cheaper than ugliness and inconvenience. There is no necessity that any man in this country, however humble in position or restricted in means he may be, should live in an ugly or ill-constructed house. The humblest cottage should, in beauty of form and convenience of construction, be equal to the finest villa; and the laboring man may without any expense be sheltered by a roof constructed upon the same principles of architectural beauty as that which shelters his wealthy employer. As the sun shines, the rain falls, flowers blossom, the stars twinkle, and birds sing for all; so are the discoveries of science and the progress of art for all."

The Architect is published by Wm. H. Graham, New York, and sold by the principal booksellers and periodical agents in the United States—price 50 cts. per number, or $5 per volume. J. T. Blain is agent, Columbus.

EWBANK'S HYDRAULICS AND MECHANICS, part IV, is received; and we again commend this very useful work to the attention of mechanics, engineers, and all who are interested in the Science of hydraulics—raising, conducting, or in any way operating with WATER. *Greely & McElrath*, N. Y.

Annual Report of the Buffalo Horticultural Society, and address of the President, Lewis F. Allen, Esq. This is a handsome pamphlet of 40 pages—the contents highly creditable to the society and the city.

MCINTOSH & Co.'s annual Catalogue of Fruit and Ornamental Trees, Greenhouse plants, &c., for sale at their extensive Nurseries, at Cleveland, O. This is is a very extensive and well arranged catalogue; and what is more,

those who visit the nursery or send orders, will not be disappointed, as is sometimes the case by extensive catalogues and advertisements.

Ohio Legislature.

NEW LAWS RELATING TO AGRICULTURE, &c.

The General Assembly of this State adjourned on the 25th ult., after a session of eighty-two days.

Among the laws passed the present winter, are several that relate to agriculture, or matters of practical interest to our readers, which we embrace this early opportunity to insert in our columns. The one which provides for defraying the expenses of the members of the State Board while attending meetings of the Board, we trust will secure a full attendance of the members hereafter, and thereby give more life and efficiency to the doings of that body. We are happy to state also, in this connection, that there is a prospect of a larger sum being realized from the act of last winter, "to create a permanent agricultural fund," than was at one time anticipated—altho' the legislature did not see fit to extend the provisions of that act relating to public shows so as to include incorporated towns, as was asked for by the Board. The following acts were passed the present winter:

State Board of Agriculture.

AN ACT *further to amend an act entitled "an act for the encouragement of Agriculture," passed Feb. 27, 1846.*

1. *Be it enacted, &c.*, That the Ohio State Board of Agriculture shall have the power to audit and pay the ordinary expenses of the Board, including the necessary personal expenses of members in their attendance on not more than three meetings in any one year, out of any funds now in their hands, or that may arise under the provisions of the "act to create a permanent agricultural fund in the State of Ohio, and for other purposes," passed Feb. 8, 1847; and it shall be the duty of the Board in their annual report to state the names of the persons to whom any payment is made under this act, and the amount paid to each.

2. This act to take effect from and after its passage.

(Signed,) JOSEPH S. HAWKINS,
Speaker of the House of Representatives.
CHARLES B. GODDARD,
Speaker of the Senate.

Passed Feb. 18, 1848.

Weight of Clover Seed per Bushel.

AN ACT *further to amend an act to provide for a uniform standard of weights and measuring.*

SEC. 1. *Be it enacted, &c.*, That whenever clover seed shall be sold by the bushel, and no special agreement as to the measurement shall be made by the parties, the bushel shall consist of *sixty pounds.*

SEC. 2. That all parts of laws inconsistent with this act are hereby repealed.

SEC. 3. This act shall take effect and be in force from and after its passage.

(Signed,) JOSEPH S. HAWKINS,
Speaker of the House of Representatives.
CHARLES B. GODDARD,
Speaker of the Senate.

Passed Feb. 25, 1848.

False Weights and Measures.

(The necessity for this law will be seen by referring to the Ohio Cultivator of April 15, 1847, p. 58.)

AN ACT *to amend an "act to provide for a uniform standard of weights and measures," passed Feb. 21st, 1846.*

SEC. 1. *Be it enacted, &c.*, That if any person or persons shall hereafter use any weights, measures, or beams in weighing or measuring, which shall not conform to the standards of the State established by the act to which this is an amendment, or any other measures established by law, whereby any dealer or purchaser or seller of any commodity or article of traffic shall be injured or defrauded, such dealer, purchaser, or seller, may maintain an action on the case against the offender, and if judgment be rendered for the plaintiff, he shall recover double damages and cost of suit.

SEC. 2. The fifteenth section of the "act to provide for a uniform standard of weights and measures," passed Feb. 20th, 1846, is hereby repealed.

(Signed,) JOSEPH S. HAWKINS,
Speaker of the House of Representatives.
CHARLES B. GODDARD,
Speaker of the Senate.

Passed Feb. 24th, 1848.

Protection of Cranberry Marshes.

AN ACT *to amend "an act to punish the offences of cutting down or destroying fruit and ornamental trees, and stealing fruit and vegetables, in certain counties of this State,"* passed March 13th, provides, (Sec. 1,) that the said act be and the same is declared to embrace within its provisions cranberries and cranberry marshes.

Passed Feb. 24th, 1848.

Attention Farmers!--Plow Monopoly.

It appears by the proceedings of Congress that the heirs of Jethro Wood, are again making the attempt to obtain a renewal or extension of the patent right of said Wood, for the cast iron plow; and that a bill for that purpose has actually passed the Senate and is now under consideration by the House. We hope that farmers and plow makers will lose no time in sending remonstrances to their Representatives in Washington against this unjust and oppressive measure.

The following preamble and resolutions on this subject were recently adopted at a meeting of the executive committee of the New York State Agricultural Society, and the Secretary was directed to forward a copy to the Senators and Representatives of that State:

Whereas, a bill has recently passed the United States Senate, renewing, for the term of seven years, the patent of Jethro Wood for improvements in the cast-iron plow, and imposing a tax of fifty cents on every cast-iron plow manufactured in the United States during that time; and whereas for the following reasons such an act would be manifestly improper and unjust, viz:—1st. That the patent of Jethro Wood has, as we are informed, almost entirely passed out of the hands of his heirs, and is now mostly held by persons who have conferred no particular benefits and have therefore no special claims on the public; and 2nd. That the improvements originated or formerly claimed by said Wood, are in many instances combined with other and later improvements, which have rendered the plow much more perfect than it could be made on the basis of his invention alone. Therefore,

Resolved That in the opinion of this society, the patent of Jethro Wood ought not to be renewed; he having enjoyed, in the period of twenty-eight years, for which his patent has been granted, a full equivalent for every improvement that may have been made by him in the cast-iron plow.

Resolved, That in the opinion of this society, the passage of such a bill into a law, would be an act of gross injustice to the Farmers and Planters of the United States.

Resolved, That this society respectfully but earnestly tenders to the Congress of the United States, its remonstrance against the passage of the bill renewing the patent of Jethro Wood. B. P. JOHNSON, *Sec'y.*

Since the foregoing was in type we have received the following:

Important to Farmers.

PATENT FOR CAST IRON PLOWS—UNJUST MONOPOLY.

Allowing me to call the attention of all those who use a plow made of cast-iron, to the fact that the heirs of Jethro Wood, deceased, are making efforts again to get the patent renewed to them for the exclusive right to make *plows or plow points of cast-iron*, and that a bill to that effect has passed the Senate and is now pending in the House.

The bill proposes to extend the patent to them for seven years. It is alleged in favor of the bill, that although said Wood enjoyed the right for twenty-eight years, yet, owing to prejudices and other circumstances, he expended a fortune in introducing his plow into use, and did not realize any adequate pecuniary compensation from it.

This is an important matter to the farmers, most, if not all of whom, at this time, use some form of cast-iron plow.

The claim of the Patentees, as I understand it, is to every form and variety of plows made of cast iron.

If the bill should become a law, the effect will be to enhance the price of the plow, and this enhancement of the price must necessarily come out of the farmer, the man who uses the plow, for the benefit of the Patentees.

I have good reason to believe that ex-Governor Seward, of New York, and an ex-member of Congress from the same State, [the Hon. Christopher Morgan,] are interested with said Wood's heirs, equally, in the benefits proposed to be conferred by the renewal of said patent.

Do the farmers wish to be taxed on their plows for the benefit of these men, who have no claim on the ground of invention or improvement; and whose only claim must be an interest obtained by bargain with the heirs of Wood, and probably on the ground of having influence at Washington? This certainly cannot be desired.

But are the allegations true, that neither Jethro Wood nor his heirs received any benefits from his invention?

In answer to this inquiry, I have not sufficient information to speak with entire confidence. But I may give what will render the case probable.

When the application for a renewal of the patent was before the Senate on the 26th January last, Mr. Sturgeon said that six or eight thousand dollars had been extorted from plow makers of Pittsburgh, for improvements of the patent of Jethro Wood.

And plow makers in this vicinity, who had made Plows, having purchased rights of Dutcher, have had also large sums extorted from them by said Wood's heirs. And I am credibly informed that the same has been the case in other parts of the country; so that a very large sum has been received. Consequently, the ground upon which they ask for an extension is not true, as they allege.

The only way left is, for those who are interested in the matter, to draw up remonstrances without delay, and forward them to their Representatives in Congress, and thus avert this odious monopoly.

And I would invite the attention of farmers to the subject, and urge them to take the matter into their own hands and at once draw up remonstrances, and circulate them immediately in every neighborhood and forward them to Washington. Do not wait one for another, but let every man bestir himself. GEO. K. PARDEE.

Wadsworth, O., Feb. 18, 1848.

Editors please copy or notice.

Cheer to the Farmer.

Ye tillers of the soil,
Come listen to the word
Of one who 's felt the *joy* of toil,
When summer's winds have stirred;

For there is even joy
To him of sunburnt face
'Mid dirt and sweat and hard employ,
Though air be motionless.

The joy of blooming health;
The joy of honesty;
The joy of surely coming wealth
To frugal industry.

I'd speak encouragement
Unto you, husbandmen,
For though the sunny day is spent,
It will return again.

Although your bright hope's sun
Has set, and twilight now
Is gathering o'er the path you run,
Yet hold a smiling brow.

Unhappy thoughts will crowd
Into the calmest breast,
When friends, once friends, grow rich and proud,
And want a nobler guest.

And who is nobler than
The tiller of the soil?
When God himself ordained the plan
That man for bread should toil.

There's honor in the sweat
That stands upon the brow;
There's honor in a shirt all wet
With following the plow.

The wise, the good, the great,
Have tilled the teeming ground,
And held, at once, the reins of State,
Or spread the Gospel's sound.

Then care not for the scorn
Of those too proud to toil;
They wear the cloth and eat the corn
Of us who till the soil.

Though we may hardly aim
To reach wealth's pinnacle,
Or scale the highest mount of fame,
We've wealth and honor still—

Enough of life's good things,
Is all of wealth we need;
And honors such as duty brings,
All honors else exceed.

Central Ohio, January, 1848. EM. W.

Hints about planting out and Cultivating around Fruit Trees--List of a few Choice Fruits.

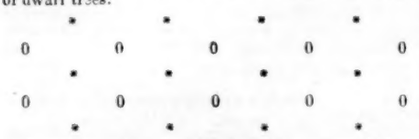
As the spring advances upon us and nature again gradually resumes her garb of green, man is reminded of his oft broken resolution not to let another season pass without planting out some trees.

Spring and fall planting both have their advocates; in theory the advocates of fall planting would probably be the most numerous, while in practice, those favorable to spring are without doubt, quadruple the former—and simply from the reason of delaying from day to day for the supposed want of time—that which their judgment tells them should not be longer postponed. We hold it as much the duty of every man to plant out trees and thus aid, improve and beautify his country, as it is his duty to respect her laws and exert himself to obtain from her resources an honorable support. Every tree planted out and nourished into beautiful vigorous life is creditable to the cultivator, and the man who renders his home pleasant by adding trees of rich and delicious fruits—shrubs of beautiful foliage and gay in flowers of high perfume, be that home within the confines of a city's limits, where most of outward scenes are evidence of mammon, or be it in the broad open country where all is free, and bearing evidence of skill and power superior to that of man, does more to make his name remembered and esteemed than all the piles of brick and mortar ever yet erected. But to come more directly to our subject we will first consider the

NUMBER OF TREES WANTED.

If a person is planting for orchard on a large scale, it

will not answer to place his trees as thickly as when in a measure confined to a certain space, and desirous of using every inch of ground to advantage. For orchard planting, thirty feet apart each way should be the distance for apples; for pears twenty-five, for plums twenty, for peaches fifteen. The most economical use of ground, however, we conceive to be planting in quincuux form, as follows—the stars designating the apple or standard pear trees, while the cyphers are occupied by peach or dwarf trees:



In gardens where trees are planted to surround the enclosure, apples may be planted at twenty feet distance, pear at fifteen, peach at twelve, and thus occupy the ground without materially affecting the natural wants of the tree. With these few remarks every cultivator can calculate the number of trees he may want to plant according to his grounds.

A material point in obtaining trees for planting, is to be assured they are correct to the name given by the seller, as nothing can be more provoking than after waiting four or five years to find the trees planted out not to correspond with the recommendation, and that you have again to plant, or else re-engraft, in order to obtain the variety you desire. Be careful therefore to make purchases from some responsible and intelligent grower.

To facilitate the planting, have your ground ready prepared; towards which the following directions may aid:

PREPARATION OF THE GROUND.

Many cultivators think that if they dig a hole two or three inches larger than is necessary to extend the pruned roots of a tree to be planted, they are doing wonders—what then will they say when we come as now to recommend a hole two and a half feet deep, by six or eight feet in diameter, to be dug for the planting of common sized trees from the nursery. The earth should all be thrown aside and the hole filled up 18 inches with turf turned turf side down, or if not turf, get from the woods, or an old pasture, or fence corner fresh loam. For the remaining earth, when you come to plant, fill up with the top soil of the ground around you, replacing with the earth dry from the hole. This is for garden planting.

For orchard planting on a large scale, plow and follow with a subsoil plow as deep as you possibly can, no matter what the soil, sand, clay or loam. Be not afraid to turn up the yellow earth, one season's action of air and light will aid materially in changing its color, and in that change the crude raw elements of nourishment to vegetation have become prepared for use. Mark out your ground the distance you intend planting your trees by running your plow twice both way of the rows. A very little preparation is now necessary, for in planting an orchard we would not dig too deep, but place our trees near the surface, and rather make a mound around them than bury them below the influence of light. Observe at every place where a tree is to be planted that the plows have loosened the ground at least eighteen inches deep.

SELECTION OF TREES.

As much perhaps depends upon the tree to be planted out as the care afterwards to be given it, to insure a healthy and well formed tree at four or five years after planting. To select *thrifty* trees has been so much a point of advice with writers upon this subject, that many cultivators in order to meet the wishes of purchasers have been compelled to force growths of their trees for sale beyond the actual health of the tree, forming the tree straight and apparently fine, but in reality of so porous and pithy a consistence is the wood, that often disease may already be said to be formed, and the tree is all unfitted to endure the sudden changes of our fitful climate. A tall slender stem of a tree, devoid of side or lateral branches, will usually be found with but few small lateral roots, and such tree is therefore much less capable of bearing removal than one well provided with the laterals, and yet such are the trees too often selected by planters. An apple or pear tree should be about three years old from the bud, when inserted near the ground, and have been grown with little pruning except to keep the leading shoot straight until the last or third year, when it should have been pruned up to where it is intended to form the head.

Plum trees require to be pruned the second year, and many of them at that age are sufficiently grown for transplanting. They should always be pruned before the branches to be taken off attain a size of more than half an inch in diameter.

Cherry trees should never be more than two years old from the bud, and should then be about six or seven feet high, with heads formed. One year old is an age more profitable to the purchaser, as the cherry is of rapid growth, and trees removed one year from the bud suffer very little injury to the roots, and therefore receive little check in after growth. The cherry is of rather a porous nature in its roots, and when large roots are broken, as is almost unavoidable in removing large trees, they are liable not to heal readily, and by throwing out new rootlets aid the growth of the tree; but on the contrary the root gradually decays, and frequently before the few small roots, that were removed with it, are enabled to furnish it to keep up vigorous life, it withers and dies. The peach, like the cherry, is of a porous nature; but far more so than the cherry—and although large trees are often moved with success, as a general rule there is more to be gained by planting those of one year's growth from the bud than such as are older. The heads should be formed low, and the lower branches should have been shortened during August. A peach tree grown four feet in a season, with a stocky stem, numerous lateral branches, and well ripened wood, will in four years from its being transplanted, form a much more valuable tree than one with a slender stem pruned high for two seasons.

Cultivators of the grape always in planting out a vineyard use one year old roots if they have been well grown, and never those of more than two years' growth. The reason is obvious, from the fact that the grape extending its roots to a greater distance in a single season, and being spongy, they do not as readily heal after having been broken and removed.

These remarks will of course be varied, as are the varied habits in growth of trees; one variety, for instance, the Baldwin apple, making as much or more growth in one season as the Early Harvest will in two. It is therefore as suitable for planting at two years old as the Harvest is at three years.

PLANTING AND AFTER CULTURE.

Premising that your ground is all prepared when your trees arrive, if you have a hundred or so of them, let your first care be to place the roots in a shallow trench, and cover earth sufficiently over them to keep them moist, and protect such as may have to remain until another day, against any sudden cold or frost consequent upon the night.

Take from the trench one tree at a time, with a sharp knife carefully prune smoothly the end of every broken root, taking away entirely all such as are bruised or cracked. Then place your tree so that the upper roots will be about four inches below the surface of the surrounding soil after your planting is finished. One person should hold the tree in an upright position with one hand, while with the other he straightens out all the roots to their natural position. Another person should then sift in gently some fine mould which the person holding the tree should work all among the lower tier of roots, pressing it firm and well among them with the ends of the open fingers of his hand; then raise the upper roots and fill in earth until they lay naturally; repeat the mode as above and so on until the whole is done, and leaving the earth perfectly level around the tree. Avoid any pressure of the foot or other weight more heavy than the finger working. In such manner the writer has planted large trees and never yet had occasion to use a stake for tieing the tree, nor had a tree moved by action of the winds, even on our lake shore, so as to require righting up.

Newly planted trees should receive the first season a mulching of half decayed leaves or chips, to the depth of about four inches, and spread over a diameter eighteen inches larger than the roots of the tree extended when planted. In the ensuing fall, give to the tree a liberal dressing of manure and ashes, and place the same beyond a circle of four feet around the tree. In the ensuing spring fork this all under lightly. Watch carefully the breaking out of suckers from the roots near the body, or the appearance of water shoots. If seen so as to displace them ere they have grown more than two inches, let it be done; but if neglected until they are six inches or one foot in length, leave them on until the next spring's pruning.

SELECT VARIETIES.

To select a few varieties that will give general satisfaction, from the present numerous collections offered for sale by nurserymen, (almost every fruit of which so grown having its special admirers, until the catalogues read, "fine," "extra fine," "productive and delicious," attached as their character,) is probably almost as difficult as the effecting a peace with Mexico; but for the sake of all nurserymen, we trust not attended with one tithe of the expense. As a general rule it is not well for the planter of orchards or gardens to occupy ground with any variety except such as have been well tested here at the west.—Occasionally we have a fruit brought to notice by some pomological gentleman upon whose opinion we can rest with safety, and with such fruits there is little danger of deception. The writer is not as much a believer that climate affects the fruit as that every specific variety requires specific nourishment in order to grow it in perfection. Therefore if a new variety is to be introduced, let us first find the analysis of the soil in which it has been grown with uniform success, and by placing it in similar soil, nine times out of ten, no disappointment would occur.

In selecting from *apples* were we to have but one tree, it would be the "Belmont." If three trees, summer, autumn, and winter, we would select Summer Rose, Fall Pippin, and Swaar. For three, each of summer, autumn and winter, say Summer Rose, Early Harvest, and American Summer Pearmain. *Fall*, Fall Pippin, Gravenstein and Porter; for *winter*, Belmont, Swaar, and Nonsuch. If six of a season, say *summer*, Rose, Early Harvest, American Summer Pearmain, Red Astrachan, Williams Apple, and early Joe; *fall*, Fall Pippin, Gravenstein, Porter, Fall Harvey, Pomme de Neige and Minister; *winter*, Belmont, Swaar, Nonsuch, Hubbardston Nonsuch, Canada Reinette and Roxbury Russet.

If forty varieties are wanted, add to these already named, the Rambo, Maiden's Blush, Rhode I. Greening, Westfield Seeknofurther, Yellow Bellefleur, Court of Wyck, Jonathan, Lady Apple, Herfordshire Pearmain, Newtown Pippin, Yellow Newtown Pippin, American Golden Russet, Wine Apple, Winesap, Esopus Spitzenberg, Brabant Bellefleur, Pryors Red, Fort Miami, Woods Greening, Large Early Bough, Jersey Sweeting, and either Phillip's or Ladies' Sweet.*

Pears—We will only give a list of a few known to be good hereabouts, as Dearborn's Seedling, Bartlett, Gansel's Bergamotte, White Doyenne, Fondante d'Automne, Louise Bon de Jersey, Seckle, Marie Louise, Steven's Genesee, Winter Nelis, Summer Franc Real, Belle of Brussells, Beurre D'Aremberg.

Plums—We would plant out Jefferson, Lawrence's Favorite, Washington, Purple Favorite, Huling's Superb, Imperial Ottoman, Coe's Golden Drop, Imperial Gage, Yellow Gage, Bleecker's Gage, Frost Gage, and Smith's Orleans.

With *Cherries*, in making a list we may be thought to favor ourself if we say for seven varieties those raised by Prof. J. P. Kirtland, and described in various journals during the past year, cannot be surpassed. To them we will add, Coe's Transparent, Black Tartarian, Swedish, Elton, Downer's Late Red.

Peaches—A dozen of some of the best varieties would be made with Brevoort, Crawford's Early and Late Melocoton's, Early York, Malta Druid Hill, Coolege's Favorite, Red Rareripe, Yellow Alberge, La Grange, Tyslop's Cling.

For hardy *Grapes*, the Catawba, Isabella and Elsinborough, are the only ones as yet brought to notice as worthy much attention.

For *Apricots*, Dubois' Early, Golden, Bredar, Peach, and Moorpark.

With *Nectarines*, we have never yet been fortunate enough to see good ones grown in the open air, and therefore can recommend no one variety over another.

The Orange *Quince* is about the only variety of that fruit very desirable. F. R. ELLIOTT.

Lake Erie Nursery, Cleveland, 1848.

*This selection of fruit, it will be understood is made with reference mainly to the soil and climate of the northern portion of the State; and we know of no one more competent for making such a selection than the writer; but for the soil and climate of central and southern Ohio, and corresponding districts in other States, some variations of the selections would be desirable.—ED.

Big, Bigger, Biggest Ears of Corn.

"Leather Wood Valley" Beaten.—Mr. Robert Baird, of Adams county, informs us that he obtained some seed corn last spring of Capt. Gillet, of Quaker Bottom, from which he produced many ears that contained over 1200 grains each; and one ear contained 1612 grains. He expects to beat this next year.

ANOTHER.—Mr. John Foster, of Cumberland, Guernsey counnty, writes that he produced an ear the past season that contained 28 rows, and 32 grains on a row—making 1456 grains.

BIGGER STILL!—Mr. Jacob Proctor, of Quaker Bottom, writes us, "One of my neighbors, [not on Quaker Bottom, but on land between the hills,] raised the past season an ear of corn containing 2000 grains—and if any body beats this I will tell you how many more grains were on the ear."

BIGGEST OF ALL!—Our old friend Capt. H. N. Gillet, in an account of premium crops raised in Quaker Bottom, [which will appear in our next,] says he raised of his improved corn hundreds of ears that would count from 300 to 500 grains more than any previously noticed in the Cultivator; and one ear produced 2334 grains.

You may send on the rest of your story, friend Proctor.

Capt. Gillet requests us to say to the gentlemen of Leatherwood, and all other valleys, and of Iowa, in the bargain, who have been puffing their *nubbins*, that Lawrence county is a trifle ahead yet in the matter of big ears of corn. He wonders how many of their nubbins grow on one stalk?

VIRGINIA TEA CAKE.—Stir together half a pound of sugar and half a pound of butter, add a gill of white wine, a grated nutmeg, and eight well beaten eggs, the whites and yolks should be beaten separately. Then stir in a pint of sifted Indian meal, and half a pint wheat flour first mixed together. Beat it till it is perfectly smooth and light. Pour it into a well-buttered tin-pan, and bake about two hours.

HOUSEWIFE'S DEPARTMENT

CONDUCTED BY MRS BATEHAM.

Correspondents will accept our thanks for having remembered us so generously. We cheerfully resign most of our space to them. Much to our regret we feel obliged to reject some of their contributions, yet we hope they will by no means take umbrage, but "try, try again."

After some revision we give our readers the "Homely hints" of "Clare Temple." Such hints we deem calculated to do good to very many housekeepers. It will give us pleasure to hear from her again.

The poetry of Ruthanna contains some good thoughts which might have been acceptable in another dress. Their poetic costume would hardly bear the test of criticism.

The Quilt pattern from Elmira is quite pretty and ingenious. We admire tasteful patchwork, but still feel that the time spent on it might have been employed more profitably. The pattern cannot be represented in type, it would require an engraving—an expense hardly justified by its merits.

We regret that we can by no sort of logic convince ourself that the very interesting and amusing article from "Lyra" is in keeping with the peculiar character of our paper. It has afforded us pleasant thoughts.

Answers to several inquiries will appear in our next.

The receipts for compounding and cooking a great variety of dishes, composed mostly of Indian meal, are continued in this number, and we think will be found more useful than any thing we could write.

Neatness in Housekeeping.

"Take care now, Clare," says a prudent friend at my elbow, after reading my title. "Do not deal too lavishly in home thrusts, you know you are apt to say strong things in a strong way. Remember those sayings which might be tolerated at your father's hearth, or among familiar friends, may not be so kindly received by strangers."

Now, Mrs. Editress, if, after giving my article a perusal, you should think as my friend does, revise it to suit you or throw it into the fire. I will give a plain matter of fact statement of my sentiments, hoping thereby to benefit some of my sex. And I don't believe one of them will be offended, and I'll tell you why: I have lived some time in the world, and am a pretty close observer of *women* and things; and I have never yet seen a woman who would acknowledge herself untidy. If she was not as neat as my aunt Tabitha, [who was the neatest body in all Massachusetts, as every one who knew her, would allow,] she was at least as neat as under the circumstances she could be.

I am one of that sort of women who think it does no harm to jog people occasionally by homely hints; and, to use a homely adage, if the coat does not fit at all, then is enjoyed what theologians term 'the peace of assurance;' while on the other hand, if any of your readers should find themselves a little reproved and be induced to practice amendment, my object will have been accomplished.

I shall not go into an argument to show the necessity of being *neat*, but take it for granted that every one thinks as I do; that altho' a woman may possess every other accomplishment—together with abounding wealth and the best of society, yet if this element in her character be wanting, we feel that she is a splendid failure.

I shall take the adage—"An ounce of prevention is worth a pound of cure," and modify it to read—*An ounce of keep clean is worth a pound of make clean*, and adopt this for my motto at the present time.

This was my aunt Tabby's motto; and so valuable did she regard it, that I believe she added it to her catechism. I am sure she did to that of her hired help. I do not say that *every* housekeeper can carry it out in all her domestic affairs as *she* did; but I do say, that *many* of my aunt's practices might be adopted by every housekeeper, whatever her circumstances; and much, very much, be added thereby to the comfort and convenience of a multitude of families.

I hesitate not to assert, that one third, and in many cases, one half of the domestic drudgery of a family might be saved by the adoption of the "keep clean system."

Take a simple case for illustration—that of taking care of a sleeping room. A careless housekeeper will have a thin and perhaps torn straw tick, and feather tick ditto, instead of a good straw matrass, and firm feather tick, which, in the end, would be cheaper—for, in carrying out my theory, I design the expense shall be *really* no greater in the one case than in the other. Such a state of things furnishes a good quantity of straw, feathers, and dust to be disposed of every time the bed is made.—The washing stand is allowed to stand close to the wall, with no towel or newspaper pinned against it, hence it very soon becomes spattered and defaced, requiring a whitewash, or new paper. Again, there is no sheet zinc, oil cloth, or rug under and around the stove to preserve the floor or carpet; and in many cases the wood is thrown down because there is no woodbox. Such a housekeeper usually takes off her bedclothes and throws them upon the carpet, (thinking, I presume, that a *carpet* is cleaner than the *floor* would be under the same circumstances.) When time arrives for sweeping, a commencement is made under the bed, perhaps, and the dust is much of it lodged against the footcurtains which are not turned up; then the sweeper commences at one side of the room and with powerful movements sweeps the dust straight forward irrespective of chairs, tables, &c., which may come in the way. As a result these have to be dusted all over every day. Then if the stove hearth, or whatever may be under it, needs washing, care is not taken to avoid soiling the carpet, and a very disagreeable looking streak soon appears. To complete the operation, a brush or coarse cloth is used in dusting, which very soon gives the furniture a scratched dingy appearance.

But as I dislike to find fault, even with imaginary folks, I will just tell how aunt Tabby did such things, and leave your readers to adopt her plan or not as shall please them. Once every week, say on Monday morning, after having removed her cap and thrown a turban or sunbonnet over her head, she would remove the bedclothes one by one, shaking the outside quilt thoroughly, out doors, to remove the dust which had unavoidably accumulated through the week, then lay the clothes upon two chairs before an open window, taking care that not even the hems should gather dust from the floor. Then turning over the matrasses or shaking the feathers, as the case might be, rolled out the bedstead, swept carefully beneath it, then with a clean wing dusted the bedstead and footcurtains. This my aunt regarded almost as a religious duty, for she would have it that frequent dusting and washing the bedstead in clear cold water was a certain prevention of bugs. After this, the bedstead was rolled back, the clothes replaced, and the pillows put under the counterpane or covered with a newspaper during the sweeping. A word about her bedsteads:—They all moved upon castors; aunt Tabby contended that it was far less expense to furnish castors than to mend torn carpets and *broken backs*.—She then proceeded to close tight every drawer and door, and to cover the table or stand with a newspaper or cloth, then with a light broom, kept clean for this purpose, she dusted the curtains, windows, and walls, to remove all the cobwebs: and if the windows were damp she wiped them with a dark cloth, and swept off the mop boards, after which scattering around a few tea leaves and sweeping one side far enough to accommodate the chairs, the remainder of the sweeping was done up in a trice. The dust was allowed a short time to settle, then a few moments work, with a soft chicken wing or old silk cloth, would make bedstead, table, chairs, and beaureau, shine as if just varnished.

A long process! I fancy I hear some one say. Possibly this might have occupied fifteen or twenty minutes; but remember, it was but once a week; for by proper carefulness about shaking working clothes often out doors and leaving dirty boots in their proper place, &c., a very few minutes each day would keep the room in good order till next cleaning day.

But I fear I shall weary your patience with the length of my remarks. If you think these worthy a place in your columns I will offer a few more hints when I have leisure, hoping to encourage and instruct young housekeepers whose domestic education may have been neglected and they now have the mortifying reflection that their husbands do not look upon them as fully qualified to preside in their department. And as a consequence such husbands are apt to become those most disagreeable of all bipids—yeclept "hen husseys."

Clare Temple.

Shady Nook, Feb. 25, 1848.

"Indian Corn--How to use it."

Continued from last number.

Brown Bread.—This is made of Indian and rye meal. Take equal quantities of each, say two quarts. Sift and scald the Indian meal. When it is cool, add the rye meal, with a table-spoonful of salt, and a gill of fresh yeast. Half a tea-cup of molasses improves the bread. Mix it either with milk that has been boiled, or with water, sufficient to make a stiff dough. After kneading it well, scatter dry flour over it—cover it with a coarse napkin, and set it by the fire to rise. When it is very light, separate it into loaves, and put them into buttered iron or tin pans. Bake in a hot oven three or four hours.

This is a very substantial kind of bread, and it would conduce to health if it were substituted, in part, for wheat bread. It is moist and sweet, and persons accustomed to use it, become very fond of it. It makes excellent toast. A little Indian meal improves wheat bread. It should be scalded and cooled before it is put in. Bread made of a mixture of wheat, rye and Indian meal in equal proportions, some consider better than any other kind.

When rye cannot be obtained, use one part of wheat, and two parts of Indian.

Indian Bread.—Sift four quarts of Indian meal, mix a pint of it with cold water, and let it boil half an hour, add a table-spoonful of salt, take it off the fire, and let it remain till lukewarm. Then stir in a gill of yeast, and the remainder of the meal, to render it of the consistency of dough. Set it to rise, when it is light make it into loaves, and put them into buttered pans, and bake them two hours and a half, in a hot oven.

A good and cheap Desert Dish.—Wash a pint of small hommony very clean, and boil it tender, add an equal quantity of sifted meal, make it into a batter with milk, add two table-spoonsful of butter, and four eggs. Beat it well, grease your griddle or frying-pan with a little butter or lard. Then pour in your batter, allowing enough to make each cake the size of a desert plate. Eat them with cream and sugar, or with butter and molasses.

Muffins.—Scald a quart of Indian meal, and add a little salt. Beat four eggs, whites and yolks separately.—Stir them into the meal after it has become cold. If the batter should be very thick, put in a little water. Bake in buttered muffin rings.

Muffins.—Mix a pint of sifted Indian meal, and a large spoonful of wheat flour, add a tea-cup of butter, and a little salt. Boil a pint of milk and pour it upon the meal, when it is cold, stir in three beaten eggs. Beat all together until it is very light. Bake in rings or small tins. Eat them with butter.

Carolina Muffins.—Melt in a quart of milk a piece of butter of the size of an egg. Stir in a quart of meal, add half a gill of yeast, and a table-spoonful of molasses, let it rise four or five hours. Bake in muffin rings. To be eaten hot with butter.

Cheap Muffins.—Stir into a pint of sour, or buttermilk, a tea-spoonful of saleratus, dissolved in warm water, a tea-spoonful of salt, two table-spoonsful of fresh lard, melted, and sifted Indian meal enough to make a thick batter. Bake in muffin rings.

Batter Bread.—Take six spoonsful of flour, and three of sifted Corn meal, with a little salt, add seven eggs, and a sufficient quantity of rich milk to make a thin batter. Put the mixture into little tin moulds, and bake in a quick oven.

Another more economical way of making batter bread, is to take a pint and a half of Corn meal, a small piece of lard, and a little salt, add two eggs, and enough milk or water to make a thin batter.

Hommony Cakes.—Take a pint of boiled hommony, and add a small piece of butter, and some salt. Make it into little cakes, and fry them in lard until well browned.

Breakfast Rolls.—Pour sufficient boiling water on a pint of Corn meal to make a thick gruel—let it stand until almost cold; then add a large spoonful of yeast, and mix in wheat flour until it is a stiff dough—knead it well and let it stand seven or eight hours, to rise; when it is very light, make it into rolls about an inch thick, and bake an hour in a hot oven.

Breakfast Cake.—Stir into a quart of sour milk a tea-spoonful of saleratus, a tea-spoonful of salt, and sifted Indian meal enough to make a thick batter—a little cream improves the cake. Bake it in deep cake-pans about an hour. When sour milk cannot be procured, boil sweet milk and turn it on the meal, and when it is cool, put in three well beaten eggs.

Light Batter Bread.—To a pint of milk, stir in one pint of Indian meal, half a pint of wheat flour, one tea-spoonful of tartaric acid and one of soda. Bake it in a shallow pan half an hour.

Batter Cakes.—Mix together a pint of sifted Indian meal, and a pint of wheat flour; add half a gill of yeast. Make it up stiff with water at night. In the morning add an egg, and new milk sufficient to make it thin enough to bake on a griddle.

Fritters.—Scald a quart of sifted Indian meal; when it is cold add a gill of milk, three beaten eggs and two table-spoonsful of wheat flour. Make the batter very thick, and drop it by the large spoonful into a frying-pan containing enough boiling fat to prevent the cakes from sticking. Fry them brown, and send them to table hot. To be eaten with butter and sugar. If you cannot procure eggs, substitute a gill of yeast, and let them stand till night.

Mothers, see to your Daughters.—A distinguished Philadelphia physician says—I anticipate the happy period, when the *fairest portion* of the *fair creation*, will step forth unencumbered with slabs of walnut and tiers of whalebone. The constitution of our females must be first rate, to withstand in any tolerable degree the terrible inflictions of the corset eight long hours every day. *No other animal could survive it.* Take the honest ox, and enclose his sides with hooppoles, put an oak plank beneath him, and gird the whole with a bed cord, and demand of him labor. He would labor indeed, but it *would be for breath.*

Wonder if the girls of Ohio will remember this?

Uncle. J.

Sweet-Apple Pudding.—Take one pint of scalded milk, half a pint of Indian meal, a teaspoonful of salt, and six sweet apples cut into small pieces will afford an excellent rich jelley. This is one of the most luxurious yet simple Yankee puddings made.—*Ex.*

Great Crops.

Among the premiums on crops recently awarded by the N. Y. State Agricultural Society—we notice the following:

Potatoes.—Daniel Newcomb, Pittstown, Rensselaer county, [1 acre, 405 bushels,] $10.

Martin Springer, Brunswick, Rensselaer county, [360 bushels,] $8.

Ruta Bagas.—Joseph Hastings, Brunswick, [1 acre, 1,317 2-5 bushels,] $10.

Carrots.—Wm. Risley, Fredonia, Chautauque county, [half acre, 557 bushels,] $8.

Oats—Experiments.—W. D. Osborn, Port Byron, Cayuga county, on three acres planted with corn last year:—1st acre—manured with ten cords barn-yard manure last year—oats this year, 90¾ bushels. 2d acre—corn last year, without manure; oats this year, 88¼ bushels. 3d acre—corn last year, manured with eight cords of manure and four loads of muck; oats this year, 112 bushels. [Premium $2].

Rains in Ohio.

When we were in Columbus, on the 19th ult., our friend GRIENER, of the State Library, handed us a slip, containing the following words and figures:

Fall of Rain	1845	28¾ inches.
" "	1846	45¼ "
" "	1847	54 7-10"

The observations were made by the Librarian, and are correct. It may be seen that, in the centre of Ohio, there fell very nearly twice as much rain, in 1847, as in 1845. The one was, it will be remembered, a year of drought, when thousands of cattle died in the northern counties for want of forage and water. The past year, on the contrary, was one of unusual plenty, in the way of rain—morn than was either comfortable or profitable. Indeed, the fermers along the Scioto will long remember the year 1847, for the great floods which swept their plautations, and injured their crops and fences. It may be assumed that, when the depth of rain failling, in the caurse of a year, at any given place, exceeds 50 inches per annum, there will be too much for the purposes of grain farmers.—*Chil. Gaz.*

BEE HIVES.—We know nothing more of the qualities of the several bee-hives advertised of late in this paper, than has been already published. The price we believe is from $3 to $5 for an individual right, which does not include the cost of hives. These cost from $2 to $1 each. None are made here as yet.

GARDENING may now be commenced as soon as the ground is in good order for working. Trimming bushes, grape vines, &c., is the first thing. Peas and lettuce may be sown as soon as the ground is dry.

English News, Markets, &c.

The *Hibernia* brings Liverpool dates to January 29th. The news is of but little commercial importance, and has had no material effect on our markets. Money matters had become easier, and the rates of interest reduced to 3 or 4 per cent. The prices of flour and grain continue quite low—quotations the same as our last. Provisions have improved a trifle.

The winter had been unusually mild until within a few days. The wheat crop appeared healthy.

Shipments of grain and flour from this country to Europe, have nearly ceased. There is however, a healthy state of trade in the eastern domestic markets, at what may be considered fair prices, though lower than for the past year.

The Markets.

CINCINNATI, Feb. 28.—The market has been dull of late and prices continue low. Some activity was manifest on Saturday in flour and pork. Flour sells at $4,31 a4,35 per bbl. Wheat is in demand at 85 cts—receipts light. Corn 28a30 cts. Rye is in demand at 61 cts. Pork, sales of Mess at $7,50a7,75, and of Clear at $8,50 a8,75 per bbl. Bacon is dull of sale. Lard is in better demand, at 5¾a6 cts per lb. Clover seed continues low—sales at $3,5 a370 per bush. Timothy seed $2a3, according to quality; flax seed 85 cts per bush. Butter continues at 11a12½ cts for packing, and 15a20 cts at retail. Cheese 6¼a7 cts, for shipment—demand light.

NEW YORK, *Feb.* 26—Flour is without change—Genesee and best Ohio $6,25a6,37 per bbl. Wheat $1,30a 1,35 per bushel. Corn is in less demand, brings 53a56 cts per bush. No change in provisions.

BALTIMORE CATTLE MARKET.—At the scales, on Monday, there were 55 head of Beeves offered, of which 310 were sold at $2,5 a3,75 per 100 lbs, on the hoof, equal to $5a7,25, net, and averaging about $3,12½, gross. Of the above, 240 head were driven to other markets. Hogs.—Supply moderate; sales of live at $5,75a6 per 100 lbs.

COLUMBUS PRODUCE MARKET.

GRAIN.				Honey, strained	12½	@	14
Wheat, ₱ bu.,	75	@	80	POULTRY.			
Indian corn,	20	@	22	Turkeys, each,	37	@	50
Oats,	18	@	20	Geese, "	20	@	25
PROVISIONS.				Ducks, "	10	@	12½
Flour, retail, bbl.	4 50	@	4,75	Chickens, "	9	@	10
" 100 lbs	2 25	@		SUNDRIES.			
" Buckwheat.	1,50	@	2,00	Apple. ₱o	75	@	
Indian meal, bu	30	@	37	" dried,	50	@	
Hominny, quart,	3	@		Peaches, dried,	1,25	@	1,50
Beef, hd qr.		@		Potatoes,	40	@	50
" 100 lbs.,	2 50	@	3,00	Onions,	75	@	1.00
" fore qr.,	2,00	@		White beans bu	1,00	@	
Pork, mess, bbl.		@		Hay, ton,	5,00	@	6,00
Hogs, ₱ 100 lbs.	2,25	@	2,50	Wood, hard c,rd	2,00	@	2,50
Hams, country lb,	5	@	6	Salt, bbl.,	2,25	@	2,50
" city cured,	6	@	7	SEEDS.			
Lard. lb., ret.,	5	@	6	Clover, bu.,	3,00	@	3,25
" in kegs or lbs.		@		Timothy,	2,00	@	2,50
Butter, best rolls,	12½	@		Flax,	75	@	80
" common,	9	@	10	ASHES			
" in kegs,	8	@	9	Pot, 100 lbs ,	3.50	@	4,00
Cheese,	6½	@	7	Pearl,	4,00	@	4,50
Eggs, dozen,	5	@	6	Wool, common,	18	@	20
Maple sugar, lb.	7	@	8	" half bl'd,	20	@	23
" molasses, gal.		@		" full bl'd.		@	
Honey comb, lb,	10	@	12½				

LAKE ERIE NURSERY.

CLEVELAND, OH.O.

The proprietors of this nursery have a large collection of Fruit and Ornamental Trees and Shrubs, which they offer for sale at prices to correspond with the times, or in other words, as cheap as can elsewhere be purchased.

All fruit trees are guarantied true to name, being grown under the personal supervision of the acting proprietor.

Every desirable new fruit brought into notice is early obtained, and as soon as possible offered for sale. Standard trees of every variety cultivated and kept for fruiting upon the grounds, by which it is hoped to ensure accuracy of name.

Catalogues sent gratis to postpaid applicants.

March 1, 1848. ELLIOTT & Co.

FRUIT TREE SCIONS.

The subscriber will furnish Scions for this seasons grafting from the celebrated "Northern Spy" apple trees—he scions cut by Jared P. Fitzhew, who named the tree. All orders faithfully filled.

They can be sent by Express or per Mail—price $1 00 per hundred.

Address me at Rochester, Monroe county, New York,

JAMES H. WATTS.

Rochester, March 1, 1848.

PRATT'S CORN PLANTER AND SEED DRILL.

THE CORN PLANTER is one of the most perfect machines for planting Corn, Beans, and other large Seed, that was ever invented. It can be so adjusted as to drop the required number of kernels in a hill, placing the hills at any desired distance apart, and can, also, be used to plant in drills, if required.

THE SEED PLANTER, is smaller, and a lighter instrument than the above, and is so arranged as to drop any kind of Garden Seeds with astonishing precision, and with the greatest possible despatch. The only alteration necessary is to change a small Plate in the Hopper, for every kind of seed which is desired to be dropped, and the machine will make the drill, drop the seed, and cover it, with the same movement that is required to wheel along a common wheel-barrow.

Arrangements have been made for the general introduction of these machines into this State. In the next number of the Cultivator will be found a more extended advertisement, accompanied by numerous certificates from those who have used them. The farmers in this section of the State and in all the southern part of it will have an opportunity to supply themselves before planting time.

G. HOLMES & CO,

(Proprietors of the Right for the State of Ohio.)

Columbus, March 1st, 1848.

WILMINGTON'S SUPERIOR PLOWS.

SELF CLEANING PLOW, FOR BOTTOM LANDS—AND STEEL SOD PLOW.

T. WILMINGTON, late of Brant, having removed to TROY, Miami county, Ohio, and associated himself with copartners under the style of *Wilmington & Co:*

They would respectfully inform their friends and the public, that they are extensively engaged in the manufacture of Wrought iron and Steel plows of different patterns. They would invite particular attention to their superor Steel Sod Plow, which is constructed so that by changing a bolt it can be set to or from the land, so as to answer for two or for three horses.

Our Steel Plows are warranted to scour perfectly in bottom lands and other black soils where common plows will not. In proof of their superiority we beg leave to refer to the following highly respectable testimonials:

Mr Thomas Wilmington, Troy, O.—Sir: Having each of us used two of your self-cleaning Plows the past spring, along with several other kinds, to plow some hundred acres of rich bottom land for corn, we take pleasure in stating that your plows kept constantly bright and clean, when no other plow that we have tried would do so—besides doing better work with less labor for man and team, than any other plow. And as we are fully convinced that your's is the best plow in use for bottom lands, we design hereafter to use no others; so you may expect orders from us for ten or a dozen each, in time for next spring.

C. L. EATON,

M. L. SULLIVANT, *Columbus, Sept.*, 1847.

This is to certify, that I have the present season used *T. Wilmington's* Self Cleaning plow on bottom lands, where other plows would not clean, and that his plow kept clean and bright, doing better work, and with less draught than any other plow that I have tried on such lands.

E. H. FOSS, Columbus, O.

We, the undersigned, having seen Thomas Wilmington's steel self-cleaning plow tried in black loamy ground, do certify that it scoured well, and we believe it to be the best plow we ever saw for such ground.

S. Miner, R. Moler, S. Medary, L. Goodale, M. B. Bateham, *Columbus, Ohio.*

Wm. Barbee, H. S. Mayo, Joseph Brown, Daniel Bates, Andrew Telford, John Cecil, Samuel H. McDowell, C. Haywood, *Troy*, O. *Troy, March* 1, 1848.

ADVERTISEMENTS, suited to the character or this paper will be inserted for 6 cents per line for the first, and 3 cents for each subsequent insertion.

SUPERIOR ASSORTMENT OF SEEDS,

FOR SALE AT THE OFFICE OF THE OHIO CULTIVATOR.

(*Next Building South of the State House—Up Stairs.*)

JUST ARRIVED, and more on the way, a general assortment of the best varieties of Garden Seeds; many of them "LANDRETH'S Warranted," from Philadelphia; some from the Genesee Seed Store, Rochester; others imported from England, and some raised at home.

Market Gardeners and Horticulturists will find the assortment embrace almost every article adapted to the climate and demands of this country, including some new and improved varieties of Garden Vegetables.

Peas, Beans, and the like, can be obtained by the quart or peck; other seeds, of leading kinds, as onion, beet, cabbage, &c., by the oz. or pound—small papers mostly 5 cents each.

FLOWER SEEDS—embracing about 50 select varieties, in small papers, price 5 cents each, or 50 cents per dozen papers. (Two dozen papers can be sent by the mail, costing only 10 cents for postage within 300 miles.)

Blue grass, Red-top, and White clover seeds, for dooryards, &c., separate or mixed. OSAGE ORANGE seed, (for live fences) at wholesale or retail—$2 per quart.

OSAGE ORANGE SEEDS--AT WHOLESALE.

HAVING procured a large supply of this valuable seed, fresh from the Red River country in Texas, I can supply merchants or others for retailing, at a liberal discount from current prices, if 8 quarts or more is wanted.

M. B. BATEHAM.

GARDEN SEEDS, &c

I HAVE in store my full stock of Garden and Flower Seeds, comprising all the varieties in general demand, and also a number of new and rare kinds; they are all of last year's growth, and have been selected with great care from the most extensive establishments, in the eastern states, and also in Europe.

Merchants and others supplied with assortments of Vegetable Seeds, for retailing, neatly put up in papers, labeled with the name, and directions for their culture, and a liberal discount allowed from the regular retail prices.

Osage Orange Seed for Hedges. I have just received a fine lot of New Seeds, which I offer for sale at two dollars a quart.

Fruit Trees, Evergreens, Shrubs of all kinds, Grape Vines, &c. &c., supplied to order.

Seed Store East Fifth street, Cincinnati.

Feb. 15 H. HUXLEY.

PETERS' BUFFALO WOOL DEPOT.

(SECOND YEAR.)

I HAVE established a Wool Depot upon the following plan: 1st.—The wool is thrown in 10 sorts; Merino wool being No. 1, the grades numbering down from 1 to 5; the coarsest common wool being No. 5. Saxony wool is thrown into extra, and prime 1 and prime 2. Combing and De Laines make 2 sorts more.

2nd.—1 charge for receiving, sorting, storing and selling, *one cent per pound;* this includes all charges at the depot, except Insurance.

3d.—Sales are made for cash, except when otherwise directed by owner.

☞All wool consigned to me shou'd be marked with the owner's name.

Warehouse, corner of Washington and Exchange Streets.

T. C. PETERS.

Buffalo, January 1, 1848.

RICH'S STRAW CUTTERS AND WASHING MACHINES.

THE above named Straw Cutter has at several times been recommended in this paper, as the best and cheapest machine known for cutting hay, straw, corn stalks, and other fodder. It has also received the highest honors of the New York State and other Agricultural Societies. The machine is made of three different sizes, and sold at $12, $14, and $16, according to size. It is simple in construction, easily kept in order, and compared with the cost, will cut faster and better than any other machine known.

☞These machines are manufactured and and sold by Samuel Wilson, Willoughby, Lake county, Ohio, who is agent for the sale of Rights for the northern half of this State. The machines are also for sale by John Stair & Son, Cleveland, O., and will be in a short time by J. & G. Denning, Machinists, Columbus.

RICH'S WASHING MACHINE—(See notice on p. 23 of this paper.) Mr. Wilson is also agent for the sale of rights for this machine for the State of Ohio, and he will in a short time visit a number of the counties for this purpose. The machines are for sale as above—except at Columbus, where they will shortly be manufactured by Chambers & Dalton. (For particular information, recommendations, &c., see handbills.)

DUTCHESS AGRICULTURAL INSTITUTE.

THE patrons of the Dutchess (N. Y.) Agricultural Institute, and the public in general, are respectfully informed that the Institute will be removed to Mount Airy, Philadelphia, in the Spring, to the beautiful grounds and extensive buildings and farm intended recently by James Gowen, Esq., for his Agricultural College.

The first session of the Mount Airy Agricultural Institute will commence on the first Thursday of April next, at Mount Airy, where it is hoped, from the superior advantages of the location, the well known zeal and experience of Mr. Gowen, who has kindly volunteered a special supervision, with the renewed exertions of the subscriber, that a liberal and extended patronage will be accorded by the public.

JOHN WILKINSON,

Poughkeepsie, February 1st, 1848. Principal.

N. B.—Terms $250, payable semi-annually in advance. No extras.

REFERENCES.

James Gowen, Esq., Philadelphia,	Rev. P. A. Farley, Brooklyn
Robert Ewing Esq., do	Samuel Allen, Esq., New York,
Zebedee Cook, Esq. New York,	G. A. Arnoux, Esq., do
Thomas McElrath, do	G. W. Dobbin, Esq., Baltimore,
John Williamson, Esq., do	Robert Farley, Esq., Boston,

Hon. Alfred Conkling, Auburn, N. Y.